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EXAMINER	
DOTE, JANIS L	

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/786,050	OGAWA ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The examiner acknowledges the amendments to claims 1 and 9 set forth in the amendment filed on Jan. 17, 2006. Claims 1 and 3-9 are pending.

2. The rejection of claim 9 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Oct. 11, 2005, paragraph 7, has been withdrawn in response to the amendment to claim 9 set forth in the amendment filed on Jan. 17, 2006.

The objections to claims 1 and 9 set forth in the office action mailed on Oct. 11, 2005, paragraph 8, have been withdrawn in response to the amendments to claims 1 and 9 set forth in the amendment filed on Jan. 17, 2006.

3. The examiner notes that the term "average circularity" is defined at page 48, lines 1-13, as the "value determined by dividing the sum of measured circularity values of total particles having equivalent circle diameters of 3 μm to 400 μm, by the number of total particles," where the circularity is defined as L_o/L where "L_o represents a circumferential length of a circle having an area identical to that of a projected particle image, and L represents a circumferential length of the

projected particle image processed at an image processing resolution of 512 X 512 (0.3 μm X 0.3 μm pixel)."

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,677,092 B2 (Arai), as evidenced by US 6,379,855 B1 (Hayashi), combined with WO 03/073171 A1 (Kishiki), as evidenced by US 2004/0241565 A1 (US'565) and the American Chemical Society (ACS) STN File Registry Number 14481-26-6. The US published application, filed under 35 U.S.C. 371, is the national stage of the WO application of Kishiki, and therefore is presumed to have been an accurate English-language translation of the WO application of Kishiki. Therefore, the US published application is used merely as an approved English-language translation of the WO application. See US'565 for cites.

Arai discloses a magnetic toner comprising magnetic toner particles that comprise magnetic iron oxide particles and a binder resin and hydrophobic silica particles. Col. 8, lines 1-8; col. 16, lines 21-24, and 49-52; col. 23, line 62, to col. 24, line 56; and Table 4 at col. 25, example 1. The

magnetic toner has a saturation magnetization of 32.2 emu/g and a residual (i.e., remanent) magnetization of 8.72 emu/g in a magnetic field of 10 KOe. Table 4, example 1. The saturation magnetization of 32.2 emu/g, i.e., 32.2 Am^2/g, together with the residual magnetization of 8.72 emu/g, i.e., 8.72 Am^2/g, in a magnetic field of 10 KOe, i.e., 795.8 kA/m, meet the magnetization limitations recited in instant claims 3 and 7. See Hayashi, col. 7, lines 30-35, equating 1 emu/g to 1 Am^2/g, and a magnetic field of 795.8 kA/m to 10 KOe.

Arai does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Arai teaches that the type of binder resin in the toner is not particularly limited, and that the binder resin can be a polyester resin. Col. 5, lines 45-50.

Kishiki discloses a polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst. The polyester resin is obtained by reacting a phenol novolak-PO (i.e., propylene oxide) adduct with a dicarboxylic acid in the presence of potassium titanyl oxalate as the condensation catalyst. US'565, paragraph 0049, lines 7-8; and paragraphs 0268-0269, example 7, toner binder TB7. Potassium titanyl oxalate meets the compositional limitation of formula VII recited in instant claims 3 and 7, when m=2, n=1,

and M is potassium. See the ACS STN File Registry Number 14481-26-6. The phenol novolak-propylene oxide adduct is within the compositional limitation of the "oxyalkylene ether of a novolak-type phenolic resin." According to Kishiki, when a toner comprises the toner binder TB7, the toner is capable of maintaining good low temperature fixability and hot offset resistance. The toner binder TB7 prevents image quality deterioration even under low-temperature and low-humidity conditions. US'565, paragraph 0004; and Table 2 at page 14, example 7. Kishiki further discloses that there was "good" pigment dispersibility in the toner. The toner provides good quality images without staining the photoconductor. Table 2, example 7. Kishiki discloses that the toner pigment can be a magnetic powder. US'565, paragraph 0136.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki, to use the Kishiki polyester toner binder resin TB7 as the binder resin in the magnetic toner disclosed by Araki, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that is capable of maintaining good low temperature fixability and hot offset resistance, and that provides good quality images even under low-temperature and low-humidity conditions without staining the photoconductor.

6. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,857,432 (Tanikawa'432), as evidenced by Hayashi, combined with Kishiki, as evidenced by US'565 and the ACS STN File Registry Number 14481-26-6. See US'565 for cites.

Tanikawa'432 discloses a magnetic toner comprising magnetic toner particles that comprise magnetic iron oxide particles, a binder resin, and a particular charge control agent, and hydrophobic silica particles. Example 1 at col. 14; and Table 2 at col. 17, example 1. The magnetic toner has a saturation magnetization of 30.3 emu/g and a residual (i.e., remanent) magnetization of 5.9 emu/g in a magnetic field of 10 KOe. Table 2, example 1. The saturation magnetization of 30.3 emu/g, i.e., 30.3 Am^2/g, together with the residual magnetization of 5.9 emu/g, i.e., 5.9 Am^2/g, in a magnetic field of 10 KOe, i.e., 795.8 kA/m, meet the magnetization limitations recited in instant claims 3 and 7. See Hayashi, col. 7, lines 30-35, equating 1 emu/g to 1 Am^2/g, and a magnetic field of 795.8 kA/m to 10 KOe.

Tanikawa'432 does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Tanikawa'432 teaches that the binder resin in the toner can be a polyester resin. Col. 11, line 1.

Kishiki discloses a polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst that meets the polyester limitations recited in instant claims 3 and 7. The discussions of Kishiki and the ACS STN File Registry Number 14481-26-6 in paragraph 5 above are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki, to use the Kishiki polyester toner binder resin TB7 as the binder resin in the magnetic toner disclosed by Tanikawa'432, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that is capable of maintaining good low temperature fixability and hot offset resistance, and that provides good quality images even under low-temperature and low-humidity conditions without staining the photoconductor.

7. Claims 1, 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with WO 03/052521 A1 (Kishiki'521), as evidenced by US 2005/0064313 A1 (US'313) and the American Chemical Society (ACS) STN File Registry Number 14481-26-6. The US published application, filed under 35 U.S.C. 371, is the national stage of the WO application of Kishiki'521, and therefore is presumed to

have been an accurate English-language translation of the WO application of Kishiki'521. Therefore, the US published application is used merely as an approved English-language translation of the WO application. See US'313 for cites.

Arai, as evidenced by Hayashi, discloses a magnetic toner as described in paragraph 5 above, which is incorporated herein by reference.

Arai does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Arai teaches that the type of binder resin in the toner is not particularly limited, and that the binder resin can be a polyester resin. Col. 5, lines 45-50.

Kishiki'521 discloses a particular polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst. The polyester resin is obtained by reacting a phenol novolak-EO (i.e., ethylene oxide) adduct with a dicarboxylic acid in the presence of potassium titanyl oxalate as the condensation catalyst. US'313, paragraph 0033, lines 11-19; example 4 in paragraphs 0252-0253 of toner binder resin T4. Potassium titanyl oxalate meets the compositional limitation recited in instant claims 1 and 2, and meets the compositional limitation of formula VII recited in instant claims 3 and 7, when m=2, n=1, and M is potassium. See the ACS STN File

Registry Number 14481-26-6. The phenol novolak-ethylene oxide adduct is within the compositional limitation of the "oxyalkylene ether of a novolak-phenolic resin" recited in instant claim 8. According to Kishiki'521, when a toner comprises the toner binder resin T4, the toner has excellent low temperature fixability and anti-hot offset property. The toner binder resin T4 is capable of giving good development results and providing toners with good fluidity. US'313, paragraph 0005; and Tables 1 and 2 at page 15, example T4. Kishiki'521 further teaches that there was "good" pigment dispersibility in the toner. Tables 1 and 2, example T4. Kishiki'521 discloses that the toner pigment can be a magnetic powder. US'313, paragraph 0202, lines 2 and 10, and paragraph 0203.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki'521, to use the Kishiki'521 polyester toner binder resin T4 as the binder resin in the magnetic toner disclosed by Araki, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that has excellent low temperature fixability and hot offset resistance.

8. Claims 1, 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanikawa'432, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. See US'313 for cites.

Tanikawa'432, as evidenced by Hayashi, discloses a magnetic toner as described in paragraph 6 above, which is incorporated herein by reference.

Tanikawa'432 does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Tanikawa'432 teaches that the binder resin in the toner can be a polyester resin. Col. 11, line 1.

Kishiki'521 discloses a particular polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst that meets the polyester limitations recited in instant claims 1, 3, 7 and 8. The discussions of Kishiki'521 and the ACS STN File Registry Number 14481-26-6 in paragraph 7 above are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki'521, to use the Kishiki'521 polyester toner binder resin T4 as the binder resin in the magnetic toner disclosed by Tanikawa'432, because that person would have had a reasonable expectation of

successfully obtaining a magnetic toner that has excellent low temperature fixability and hot offset resistance.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanikawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with US 6,218,065 B1 (Tanikawa'065). See US'313 for cites.

Tanakawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 8 above, which is incorporated herein by reference.

Tanakawa'438 does not exemplify a magnetic toner comprising magnetic iron oxide particles comprising 0.1 to 2.0% by weight of an Si element as recited in instant claim 4.

Tanikawa'065 teaches that it is most preferred that the magnetic iron oxide used in magnetic toners contain a "different element" selected from the group consisting of magnesium, aluminum, silicon, phosphorus, and zirconium. Col. 48, lines 16-19. Tanikawa'065 teaches that the "different element" may be: introduced into the crystal lattice of the iron oxide;

incorporated as an oxide thereof in the iron oxide; or present as an oxide or a hydroxide on the surface of the iron oxide particles. Col. 48, lines 20-23. According to Tanikawa'065, such a magnetic iron oxide containing such a different element exhibits a good affinity with and very good dispersibility in the toner binder resin, which can be a polyester binder resin. Col. 46, lines 29-31, and col. 48, lines 32-34. Tanikawa'065 further teaches that the "different element" is preferably present at 0.2 to 5 wt% based on the iron element. If the amount is below 0.05 wt%, the "addition effect of the different element is scarce, thus failing to achieve good dispersibility and uniformity of chargeability." If the amount is greater than 10 wt%, the "charge liberation is liable to be excessive to cause insufficient chargeability, thus resulting in a lower image density and an increased fog." Col. 49, lines 1-8. Thus, the prior art reference recognizes that the amount of the "different element" in the magnetic iron oxide particles is a result-effective variable. The variation of a result-effective variable is presumably within the skill of the ordinary worker in the art. Tanikawa'065 exemplifies magnetic iron oxide particles comprising Si in an amount of 2 wt% or 0.5 wt% based on the iron element of the particles. See Table 3 at col. 59, magnetic material (i) and (ii). The amounts of 2 wt% and

0.5 wt% are within the range of 0.1 to 2 wt% recited in instant claim 4.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Tanikawa'065, to incorporate the element Si in the magnetic iron oxide particles as taught by Tanikawa'065 in the magnetic toner disclosed by Tanikawa'438, such that the resultant magnetic iron oxide particles comprise Si in an amount, such as 0.5 or 2 wt% based on the iron content, that is within the amount recited in instant claim 4, and to use the resultant magnetic iron oxide particles in the magnetic toner rendered obvious over the combined teachings of Tanakawa'438, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner having improved dispersibility of the magnetic iron oxide particles in the binder resin, and improved uniformity of chargeability as taught by Tanikawa'065.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File

Registry Number 14481-26-6, as applied to claim 1 above, further combined with US 6,197,470 B1 (Tamura). See US'313 for cites.

Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 7 above, which is incorporated herein by reference.

Arai does not exemplify a magnetic toner comprising a hydrophobic silica as recited in instant claim 5.

Tamura teaches hydrophobic silica particles that are treated with hexamethyldisilazane and a dimethylsilicone oil. Col. 22, lines 35-56, hydrophobic fine silica powder A; and Table 1 at col. 25, treated silica A. The Tamura hydrophobic silica powder A has particular hydrophobic properties. Col. 2, lines 34-49; and Table 2 at col. 25, treated silica A. According to Tamura, when the Tamura hydrophobic silica powder A is externally added to a toner, the toner can keep smeared images from occurring even in an environment of high temperature and high humidity. The toner has good transfer efficiency and does not cause melt abrasion of the photosensitive drum. Col. 2, lines 10-22.

It would have been obvious for a person having ordinary skill in the art to use the Tamura hydrophobic silica powder A as the externally added hydrophobic silica in the magnetic toner

rendered obvious over the combined teachings of Arai, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has good transfer efficiency, that does not cause melt abrasion of the photosensitive drums, and that provides images without smearing even in an environment of high temperature and high humidity, as taught by Tamura.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanikawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with Tamura. See US'313 for cites.

Tanikawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 8 above, which is incorporated herein by reference.

Tanikawa'438 does not exemplify a magnetic toner comprising a hydrophobic silica as recited in instant claim 5.

Tamura teaches hydrophobic silica particles that are treated with hexamethyldisilazane and a dimethylsilicone oil.

The discussion of Tamura in paragraph 10 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use the Tamura hydrophobic silica powder A as the externally added hydrophobic silica in the magnetic toner rendered obvious over the combined teachings of Tanikawa'438, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has good transfer efficiency, that does not cause melt abrasion of the photosensitive drums, and that provides images without smearing even in an environment of high temperature and high humidity, as taught by Tamura.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with Tanikawa'065. See US'313 for cites.

Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 7 above, which is incorporated herein by reference.

Arai does not exemplify a magnetic toner comprising a metal aromatic hydroxycarboxylate as recited in instant claim 9. However, Arai teaches that the magnetic toner can comprise a charge control agent to improve the charging level, charge rising property, and fluidity of the toner. Col. 15, lines 16-20.

Tanikawa'065 teaches organic zirconium complexes of aromatic hydroxycarboxylic acids as toner charge controlling agents. Col. 3, lines 15-25; col. 6, line 60, to col. 7, line 35; and col. 7, line 45, to col. 8, line 27. The Tanikawa'065 zirconium complexes meet the "metal aromatic hydroxycarboxylate" limitation recited in instant claim 9. According to Tanikawa'065, toners comprising said charge controlling compounds have negative triboelectric chargeability, and stably provide high quality images "even when used in a low humidity environment or in a high humidity environment and not causing image defects with lapse of time." The toner is "less liable to result in deteriorated toner even when used in a cartridge-type developing device of either a replenishment type or a use-up type." The toner also exhibits excellent developing performance and provides "developed images faithful to electrostatic images even in a long term of continuous image formation." Col. 2, lines 1-18.

It would have been obvious for a person having ordinary skill in the art to use the Tanikawa'065 zirconium complex of an aromatic hydroxycarboxylic acid as the charge control agent in the magnetic toner rendered obvious over the combined teachings of Arai, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a negative triboelectric chargeable magnetic toner having the advantages disclosed by Tanikawa'065.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with Japanese Patent 2003-202707 (JP'707), as evidenced by applicants' admission at page 48, lines 20-26, and page 49, lines 12-26, of the instant specification. See US'313 for cites and the Japanese Patent Office (JPO) machine-assisted translation of JP'707 for cites.

Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 7 above, which is incorporated herein by reference.

The Arai magnetic toner is obtained by a melt-kneading-grinding-classification method. See Arai, col. 17, lines 14-19; and example 1. Arai further teaches that the magnetic toner can comprise a charge control agent to improve the charging level, charge rising property, and fluidity of the toner. Col. 15, lines 16-20.

Arai does not disclose that its magnetic toner has an average circularity of 0.930 to less than 0.970 as recited in instant claim 6.

JP'707 teaches a toner comprising a particular metal compound aromatic hydroxycarboxylic acid, e.g., zinc dibutylsalicylic acid, as the charge control agent and having an average circularity of 0.88 to 0.95, preferably of 0.90 to 0.94, for particles having a "circle equivalent diameter" of 3 μm or more. Translation, paragraph 0006, paragraph 0018, lines 1-6, paragraph 0027, and paragraph 0064. Both average circularity ranges overlap the range of 0.930 to less than 0.970 recited in instant claim 6. JP'707 exemplifies a toner having an average circularity of 0.943, which is within the range of 0.930 to 0.970 recited in instant claim 6. Translation, table 2 at page 16, example 3. JP'707 also discloses that said toner can be a magnetic toner. Translation, paragraph 0046, lines 2-12.

The JP'707 average circularity is defined by an equation that is identical to the equation used in determining the average circularity recited in instant claim 6, but for the disclosure that "L_o represents a circumferential length of a circle having an area identical to that of a projected particle image, and L represents a circumferential length of the projected particle image processed at an image processing resolution of 512 X 512 (0.3 μm X 0.3 μm pixel)." See paragraph 3 supra; and the translation, paragraphs 0019-0021. JP'707 also does not disclose that the average circularity is for particles having equivalent circle diameters of 3 μm to 400 μm as recited in instant claim 6.

However, as discussed supra, JP'707 teaches that its average circularity is for particles having a "circle equivalent diameter" of 3 μm or more. In addition, the JP'707 average circularity is determined by the flow-type particle image analyzer FPIA-2100, which appears to be the same analyzer used in the instant specification to determine the average circularity recited in instant claim 6. Translation, paragraph 0018, lines 11-12; and instant application, page 48, lines 20-26, and page 49, lines 12-26. Thus, it is reasonable to conclude that the JP'707 average circularity is determined in the same manner as the average circularity recited in instant

claim 6. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

JP'707 teaches that in the making of toner particles by a melt-kneading-grinding-classification method, the conditions in the grinding step can be adjusted to obtain toner particles having the desired shape, i.e., circularity. Translation, paragraphs 0051-0054; and JP'707, Figs. 1-6.

According to JP'707, when a toner comprises said particular aromatic hydroxycarboxylic acid and has an average circularity of 0.88 to 0.95, the toner has excellent electrostatic chargeability and durability. The toner has no problems in fluidity, offset resistance, and blocking. The toner can provide good quality images for a long period of time. Translation, paragraphs 0005 and 0084. JP'707 exemplifies a toner having an average circularity of 0.868. That toner provided initially a toner image having good toner density, but too much fog. After 2000 copies, the toner provided a toner image with decreased image density and too much fog. Paragraph 0078, lines 6-14, and Table 3 at page 17, comparison example 2. JP'707 further exemplifies a toner having an average circularity greater than 0.95. That toner initially provided a good toner image. However, after continuous use, the toner image had decreased toner density and increased fogging,

and increased toner scattering was observed. Paragraph, 0023, lines 9-13; paragraph 0079, lines 5-12; and Table 3 at page 17, comparison example 3. Thus, the reference recognizes that the average circularity is a result-effective variable. The variation of a result-effective variable is presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'707, to use the JP'707 charge control agent as the charge control agent in the magnetic toner rendered obvious over the combined teachings of Arai, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, and to adjust the grinding conditions as taught by JP'707, such that the resultant toner particles have an average circularity within the range of 0.930 to less than 0.970 as recited in instant claim 6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has excellent electrostatic chargeability and durability, that has no problems in fluidity, offset resistance, and blocking, and that provides good quality images for a long period of time.

14. Applicants' arguments filed on Jan 17, 2006, with respect to the rejections set forth in paragraphs 5-13 above have been fully considered but they are not persuasive.

Applicants assert that neither Arai, Tanikawa'432, nor Hayashi discloses or suggests the "correlation of a specific range of the value of toner magnetization and its direct effect of reducing the toner consumption, which is a key unexpected effect of the invention." Applicants further assert that none of the cited references, in particular, Arai, Kishiki'171, Tanikawa'432, Hayashi, and Kishiki'521, discloses or suggests that by "satisfying both of the specific range of the value of the magnetization recited in instant claim 1 and use of a binder resin having a polyester component polymerized by using a Ti chelate compound as a catalyst, can the above reduced toner consumption property be achieved." Applicants finally assert that there is no motivation to combine the cited prior as set forth in the rejections in paragraphs 5-13.

Applicants' assertions are not persuasive. The reasons for combining the prior art do not have to be those of applicants. As noted by applicants in their response filed on Jan. 17, 2006, Arai and Tanikawa'432 each teaches a magnetic toner having the magnetization limitations recited in instant claim 1. See applicants' response filed on Jan. 17, 2006, page 10,

lines 15-16, and page 11, lines 20-21. As discussed in the rejections in paragraphs 5 and 6 above, Nishiki'171 teaches a polyester resin that is obtained by using a Ti chelate catalyst that meets the Ti catalyst limitations recited in the instant claims and the benefits of using its polyester resin as a toner binder resin. As discussed in the rejections in paragraphs 7 and 8 above, Nishiki'521 also teaches a polyester resin that is obtained by using a Ti chelate catalyst that meets the Ti catalyst limitations recited in the instant claims and the benefits of using its polyester resin as a toner binder resin. Thus, Nishiki'171 and Nishiki'521 each provides motivation, reason, and suggestion, to a person having ordinary skill in the art to use the Nishiki'171 polyester resin or the Nishiki'521 polyester resin as the toner binder resin in the magnetic toners disclosed by either Arai or Tanikawa'432. Accordingly, for the reasons discussed in paragraphs 5-13 above, the magnetic toner recited in the instant claims is prima facie obvious over the combined teachings of the prior art.

Furthermore, the showing in the instant specification is insufficient to show that the magnetic toner recited in the instant claims provides unexpected results over the prior art for the following reasons:

(1) The showing is not commensurate in scope with the

instant claims. The magnetic toners in examples 1-6 and 8 are preferred magnetic toners. The magnetic toners comprise preferred magnetic iron oxides comprising a preferred amount of Si element, a particular monoazo iron compound and a preferred aluminum salicylic compound as the charge control agents, and preferred hydrophobic silica particles. See instant claims 4, 5, and 9. The magnetic toners also have a preferred average circularity. See instant claim 6. The magnetic toners further comprise a preferred polyester resin obtained with a preferred Ti chelate catalyst. For the magnetic toners in examples 1-6, see instant claims 3 and 8, and for magnetic toner in example 8, see instant claims 3, 7, and 8. On the other hand, the magnetic toner in comparative example 1 does not comprise, in addition to a polyester binder resin obtained from a Ti chelate catalyst, the particular monoazo iron compound and the preferred aluminum salicylic compound as the charge control agent recited in instant claim 9, and the preferred hydrophobic silica particles recited in instant claim 5. The magnetic toner in comparative example 1 also does not have the preferred average circularity recited in instant claim 6.

Given the welter of unconstrained variables, it is not clear whether the results in toner consumption are due to the magnetic toner having the particular magnetizations recited in

instant claim 1 combined with the polyester resin obtained by using the Ti chelate catalyst recited in instant claim 1, as asserted by applicants, or due to some combination of the preferred embodiments.

(2) Furthermore, the results in toner consumption do not appear to be unexpected. The difference between the toner consumption results for the magnetic toner in comparative example 1 of 58 mg/sheet and for the magnetic toner in example 6 of 52 mg/sheet is 6 mg/sheet. However, the difference between the toner consumption results for the magnetic toner in example 6 of 52 mg/sheet and for the magnetic toner in example 8 of 40 mg/sheet is 12 mg/sheet. The difference of 6 mg/sheet is half the difference of 12 mg/sheet. Furthermore, the difference between the toner consumption results for the magnetic toner in example 6 and for the magnetic toner in example 4 of 46 mg/sheet is 6 mg/sheet, which is the same as the difference between the magnetic toners in comparative example 1 and example 6. The difference in toner consumptions between the magnetic toners in comparative example 1 and example 6 appear to be within the differences in toner consumptions between the magnetic toners in examples 1-6 and 8. Thus, the results in toner consumption for the magnetic toners labeled of the invention do not appear to be unexpected over the magnetic toner in comparative example 1 as

asserted by applicants.

(3) The showing in the instant specification, namely comparative example 1, does not appear to be a probative comparison to the cited prior art.

Arai exemplifies magnetic toner particles comprising a particular metal oxide particles having a particular volume resistivity, which are present on the surface of the magnetic toner particles. See Arai, example 1 at cols. 23-24. According to Arai, the particular metal oxide particles are a critical element of its invention. Col. 2, lines 47-59. Arai teaches that metal oxide particles on the surface of the magnetic toner "makes it possible to strictly control the conductive stability of the . . . toner; thus it becomes possible to greatly improve the image density and durability with respect to reading precision." Col. 2, lines 54-59. Instant claim 1 does not exclude the presence of the Arai metal oxide particles. The magnetic toner in comparative example 1 in the instant specification does not comprise the metal oxide particles disclosed by Arai. Thus, comparative example 1 does not appear to be a probative comparison to Arai.

Tanikawa'432 exemplifies a magnetic toner comprising magnetic iron particles and the particular monoazo titanium compound No. 4 at col. 7, as the charge control agent.

Tanikawa'432, example 1 at col. 14 and in Table 2 at page 17. According to Tanikawa'432, the particular monoazo titanium compound is a critical element of its invention. Tanikawa'432 discloses that its magnetic toner has stable triboelectric charging in low temperature and low humidity environments and provides constantly images with high image density and without fog. See Tanikawa'432, col. 2, lines 16-19, and Table 1 at col. 15, example 1. Tanikawa'432 shows that magnetic toners comprising a monoazo chromium compound do not exhibit stable triboelectric charging in low temperature and low humidity environments and provides images with fluctuating image density. See Tanikawa'432, comparative example 1 at col. 14 and in Table 1. The magnetic toner in comparative example 1 in the instant specification comprises a monoazo chromium compound as the charge control agent. Thus, comparative example 1 does not appear to be a probative comparison to Tanikawa'432.

Because the showing in the instant specification does not provide a probative comparison to either Arai or Tanikawa'432, applicants have failed to show that the magnetic toner recited in the instant claims provides unexpected results in toner consumption over the prior art toners.

Accordingly, the rejections over the cited prior art in paragraphs 5-13 stand.

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 1, 3, and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 9, and 10 of copending Application No. 10/717,452 (Application'452) in view of Tamura and Tanikawa'432, as evidenced by Hayashi.

This is a provisional obviousness-type double patenting rejection.

Reference claim 3, which depends from reference claim 1, recites toner particles comprising a colorant, a release agent, a polar resin, and an inorganic fine powder. The polar resin comprises a polyester unit polymerized in the present of a titanium chelate catalyst that meets the Ti chelate catalyst

limitations recited in instant claims 3 and 7. The toner particles are obtained by carrying out granulation in an aqueous medium. Reference claim 10, which depends from reference claim 1, recites that the toner particles are obtained by dispersing in an aqueous medium a polymerizable monomer composition that contains at least a polymerizable monomer, the colorant, the polar resin, the release agent, a charge control agent and a polymerization initiator, granulating the polymerizable monomer composition, and polymerizing the polymerizable monomer.

The reference claims of Application'452 do not recite that the toner can be a magnetic toner as recited in the instant claims. However, it is well known in the toner art that magnetic substances can be used as a toner colorant. See Tamura, col. 18, lines 56-64.

Tanikawa'432 discloses a magnetic toner that comprises toner particles that comprise a particular magnetic iron oxide particles, a binder resin, and a particular charge control agent, and hydrophobic silica particles. The magnetic toner has a saturation magnetization and a remanent magnetization that meet the magnetization limitations recited in instant claim 1. The discussions of Tanikawa'432 and Hayashi in paragraph 6 above are incorporated herein by reference. According to

Tanikawa'432, the magnetic toner particles can be obtained by a polymerization method in which the predetermined toner materials are "mixed in a monomer which should constitute the binder resin to form a suspension, followed by polymerization, to obtain the toner." Col. 12, lines 9-12. The method disclosed by Tanikawa'438 appears to be similar to the method recited in reference claim 10. Tanikawa'438 further teaches that the magnetic toner provides "stable toner images without the influence from changes in the environment such as temperature change, humidity change." The magnetic toner can also provide stable images even in continuous use for a long period of time. Col. 2, lines 5-12, and Table 1 at col. 15, example 1.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'452 and the teachings of Tanikawa'438, to use the Tanikawa'438 magnetic particles and the Tanikawa'438 charge control agent as the colorant and the charge control agent in the toner recited in the claims of Application'452, such that the resultant magnetic toner has the saturation and remanent magnetizations as recited in instant claim 1. That person would have had a reasonable expectation of successfully obtaining a magnetic toner having the advantages taught by Tanikawa'438.

17. Claim 4 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 9, and 10 of Application'452 in view of Tamura and Tanikawa'432, as evidenced by Hayashi, further in view with Tanikawa'065. This is a provisional obviousness-type double patenting rejection.

The subject matter recited in the claims of Application'452 in view of the teachings in Tamura and Tanakawa'438, as evidenced by Hayashi, renders obvious a magnetic toner as described in paragraph 16 above, which is incorporated herein by reference.

Tanakawa'438 does not exemplify a magnetic toner comprising magnetic iron oxide particles comprising 0.1 to 2.0% by weight of an Si element as recited in instant claim 4.

Tanikawa'065 teaches the use of magnetic iron oxide particles comprising Si in magnetic toners. The discussion of Tanikawa'065 in paragraph 9 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Tanikawa'065, to incorporate the element Si in the magnetic iron oxide particles as taught by Tanikawa'065, such that the resultant magnetic iron

oxide particles comprise Si in an amount, such as 0.5 or 2 wt% based on the iron content, that is within the amount recited in instant claim 4, and to use the resultant magnetic iron oxide particles in the magnetic toner rendered obvious over subject matter recited in the claims of Application'452 combined with the teachings of Tamura and Tanakawa'438, as evidenced by Hayashi. That person would have had a reasonable expectation of successfully obtaining a magnetic toner having improved dispersibility of the magnetic iron oxide particles in the binder resin, and improved uniformity of chargeability as taught by Tanikawa'065.

18. Claim 5 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 9, and 10 of Application'452 in view of Tamura and Tanikawa'432, as evidenced by Hayashi, further in view of additional teachings in Tamura. This is a provisional obviousness-type double patenting rejection.

The subject matter recited in the claims of Application'452 in view of the teachings in Tamura and Tanakawa'438, as evidenced by Hayashi, renders obvious a magnetic toner as described in paragraph 16 above, which is incorporated herein by reference.

The claims in Application'452 do not recite and Tanakawa'438 does not disclose a hydrophobic silica as recited in instant claim 5.

Tamura teaches hydrophobic silica particles that are treated with hexamethyldisilazane and a dimethylsilicone oil. The discussion of Tamura in paragraph 10 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use the Tamura hydrophobic silica powder A as an externally added hydrophobic silica in the magnetic toner rendered obvious over subject matter recited in the claims of Application'452 combined with the teachings of Tamura and Tanakawa'438, as evidenced by Hayashi. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has good transfer efficiency, that does not cause melt abrasion of the photosensitive drums, and that provides images without smearing even in an environment of high temperature and high humidity, as taught by Tamura.

19. Applicant's arguments filed on Jan. 17, 2006, with respect to the rejections in paragraphs 16-18 above have been fully considered but they are not persuasive.

Applicants assert that instant claim 1 does not recite the presence of certain elements recited in reference claim 1 of Application'452. Applicants also assert that reference claim 1 of Application'452 does not recite the presence of magnetic iron oxide or that the toner has the magnetizations recited in instant claim 1. Applicants assert that claims of Application'452 and the claims in the instant application define distinct inventions and that the PTO could have restricted the present claims from the claims of Application'452 had they been presented in a single application.

Applicants' assertions are not persuasive. The subject matter recited in instant claims 1, 3-5, and 7 is not rendered obvious merely over the subject matter recited in Application'452. Rather, as discussed in the paragraphs 16-18, the subject matter recited in instant claims 1, 3-5, and 7 is rendered obvious over the subject matter recited in the reference claims in Application'452 in view of the teachings in Tanikawa'432 and the other cited prior art. For example, as discussed in paragraph 16 above, Tamura shows that it is well known in the toner art that magnetic substances can be used as a toner colorant. Tanikawa'432 teaches a magnetic toner comprising hydrophobic silica particles and having a saturation magnetization and a remanent magnetization that meet the

magnetization limitations recited in instant claim 1 and that said magnetic toner can be obtained by a method that appears to be similar to the method recited in the reference claims of Application'452. Tanikawa'432 further teaches that the magnetic toner can comprise a release agent. See Tanikawa'432, col. 11, lines 8-19 and example 1. Thus, for the reasons discussed in the rejections in paragraphs 16-18 above, the examiner has demonstrated that toner recited in instant claims 1, 3-5, and 7 is an obvious variation of the toner recited in Application'452 in view of the disclosure of the cited prior art, and are therefore not patentably distinct. Accordingly, the rejections in paragraphs 16-18 stand.

20. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L.

Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. Nam Nguyen, can be reached on (571) 272-1342. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Mar. 22, 2006

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PRIMARY EXAMINER
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